DOCUMENT RESUME

ED 073 928 SE 015 816

TITLE	Environmental Curriculum Materials, Level I (K-I).
INSTITUTION	Delaware State Dept. of Public Instruction, Dover. Div. of Elementary Education.
PUB DATE	Jan 73
NOTE	58p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Discovery Learning; Environmental Education; Field Trips; Grade 1; Instructional Materials; Instructional Program Divisions; Kindergarten; *Learning Activities; Natural Resources; *Outdoor Education; *Primary Grades; *Teaching Guides

ABSTRACT

Nineteen outdoor activities and 16 follow-up activities for children in kindergarten and grade one are collected in this teacher's guide. They focus on the interdependence of life; the relationship of man, animals, and plants to each other and to the environment. Most are designed as field trips, utilizing a discovery and questioning approach to learning. Based on pilot activities conducted at the Southeastern Pennsylvania Outdoor Education Center, they were subsequently revised and adapted by the New Castle-Gunning Bedford Environmental Laboratory, an ESEA Title III project. A master key divides the major activities into categories: (1) seasonal activities, (2) flora, (3) fauna, (4) habitat studies, (5) weather, geology, soils, hydrography, and (6) awareness, man and nature. For each activity appropriate grade level(s), season(s) in which to conduct it, and coordinated follow-up activity(ies) are identified. A similar key is provided for follow-up activities indicating the major activity with which it is associated in place of the coordinated follow-up activity. Each lesson outlines objectives, procedures and/or activities on the trip, and pertinent questions. Diagrams and charts supplement some of the information. (BL)

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ENVIRONMENTAL CURRICULUM MATERIALS

LEVEL I (K-I)

January, 1973

INCORPORATING
the outdoor classroom
"discovery" approach
spiral sequence activities
and follow-ups

SE 015 816

These materials were developed and piloted over a period of years at the Southeastern Pennsylvania Outdoor Education Center, an E.S.E.A. Title III project administered by the Rose Tree Media School District, Lima, Pennsylvania from 1966-1971. The activities and follow-ups were written by teachers and consultants in workshops and institutes and were revised by members of the SPOEC staff and, in 1970-71, by Roger Daum, Coordinator of the New Castle-Gunning Bedford Environmental Laboratory, an E.S.E.A. Title III project.

Printed and Disseminated through the Office

of

State Supervisor for Science and Environmental Education
Instructional Services Branch

State Department of Public Instruction
Dover, Delaware 19901

and

Del Mod System
P. O. Box 192
Dover, Delaware 19901

Preparation of this monograph was supported by the National Science Foundation Grant No. G.W. 6703

ACTIVITY MASTER KEY
LEVEL I

PAGE	TITLE
1	To the Teachers or Guide
3	The Interdependence of Life: The Relationship of Man, Animals, and Plants to each other and to the Environment
5	A Dozen Concepts.....for Environmental Education

			Level K	1	2	3	4	5	6	Season*	Follow-Up
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Act#45	91	ANIMAL HOMES	x	x	x	x				All	44
Act#48	99	BIRDS	x	x	x					F,Sp,Su	45
Habitats											
Act#57	115	COMPARISON OF WOODS, FIELDS, AND MARSH		x	x	x				F,Sp,Su	59,60,61

* F=fall, W=winter, Sp=spring, Su=summer, All=all seasons

ACTIVITY MASTER KEY
LEVEL I cont.

PAGE		TITLE	Level K	1	2	3	4	5	6	Season	Follow-Up
Weather, Geology, Soils, Hydrography											
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TO THE TEACHER OR GUIDE

This is a guide and not to be considered the alpha and omega of a field trip. No one can foresee all the variables of events or interests of children.

Children in the first years of school have an extremely short attention span. They love to be "detectives" or "explorers". First year children differ in experiential backgrounds, so language development and concepts vary greatly.

At all levels:

Do not talk down to the children, but be clear, concise and use proper names.

Give only as much information as the children can assimilate and recall fairly easily. The object is to stimulate, motivate, and interest the child in the out-of-doors. Suggest that an especially interesting feature of the trip would be a good topic for further investigation at school.

Be sure the children are dressed for the weather and the out-of-doors. Clothing that is adequate for a ten minute recess on a paved playground may be uncomfortable for an hour in a snowy or muddy woods.

Establish ground rules and the reasons for the rules at the trip site just before you begin. (Some general rules are necessary for any outdoor area that will be visited by many people). This can be done by questions to involve the child such as: "What can you do or not do during the trip to keep the area as nice as it is now?" "What is the reason for this rule?" We have had success in asking that three rules be followed:

1. Be careful to protect plants and animals from harm.
2. Keep trash with you.
3. Leave even the most interesting things for others to see.

Suggest "What you can do during the trip is use your senses." The concept of five senses may be new to younger children while the older ones are usually familiar with it.

During the trip remain with the general topic and the format of questioning the children as in the O.E.C. Activity Sheets, but don't try to follow the sheets word for word. Use the objects discovered and the events of the trip as they occur, and if possible relate to the trip topic. All living things in an environment are so interdependent this is usually very easy.

Try to have the children answer their own questions by questioning them.

Example:

Trip topic is Animals. Child picks up a walnut shell with a hole in it. An imaginary but typical exchange could be:

C: "What's this?"
A: "What do you think?"
C: "I don't know."
A: "Is it a leaf? a flower? a pineapple?"
C: (Looking at guide oddly) "No, it's a nut of some kind."
A: "Do you think it grew with that hole there?"
C: "No."
A: "Then how do you suppose the hole got there?"

From this beginning the adult might question why the hole was made and encourage examination of the interior of the shell to confirm suspicions that the nut "meat" might be missing. Much would have been lost if the answer to the first question was, "It's a walnut."

Don't be afraid to say "I don't know" to the children and to speculate with them on possible answers. Nobody knows all about natural history and ecology, which helps keep this study fresh and continually interesting.

THE INTERDEPENDENCE OF LIFE: THE RELATIONSHIP OF MAN, ANIMALS AND PLANTS TO EACH OTHER AND TO THE ENVIRONMENT

Orderly laws appear in nature. These laws seem to govern the distribution and success of living things. Do you think these laws apply to humans? to plants? to other animals? to all as a group of organisms living together?

What was the area like before man came here? What kinds of changes have occurred in the topography of the land, the soil, the plants, the animals? What has happened to the area since the appearance of man? What happens to organisms after man invades virgin territory to construct buildings and highways? Are there plant and animal species present that would not have been here if man did not alter this environment? Was man responsible for the introduction of new plants and animals and the extinction of once native organisms? What has happened to this biome since man has come and gone? What is a biome (community units, regions - examples, tundra, northern coniferous forest, temperate grassland, temperate deciduous forest, etc.)?

Relationships among different plants and animals are orderly. Is this relationship also true for man? Is man the only organism that can manipulate the environment? Can other organisms manipulate the environment? How? What are the relationships of abiotic factors such as light, moisture, temperature and nutrients to the plant communities, to the animal community, and to man? How do they all interrelate for the establishment of a habitat of good quality? What is the difference between abiotic substances (nonliving) and biotic substances (living)? List some examples of each. How do they affect each other?

What kinds of communities do we find in this ecosystem? What is a community? (Living part of an ecosystem, any assemblage of population.) What are the inter- and intrarelationships found in these communities? Are there any dominant communities in this ecosystem? What is an ecosystem? (Major units in which all living and nonliving factors of the environment are integrated. Example - land and water ecosystems.) What are the factors that allowed these plants and animals to dominate this particular region? What relationships do they impose on one another? on man?

During winter months, snow can be used to illustrate some of the abiotic factors that bring about changes and how these factors affect living things. What is its relationship to man? to plants? Is snow beneficial to living organisms? Is it destructive in any way? What is the snow's relationship to the water table and how does this relate to all living things?

Salt is used to melt the snow. Does this salt have any harmful effect on plants and animals? Does it have any effect on man? Any abiotic factor (such as - light, temperature, climatic conditions, weather, moisture, etc.) or biotic factor during any season can be used to demonstrate the relationships that exist in an environment.

A DOZEN CONCEPTS...
for Environmental Education

As you may have noticed, NATURE STUDY now is subtitled "A Journal for the Advancement of Environmental Education." It is our belief that environmental education should have certain concepts as its objectives. The following concepts should be considered as goals in the development of programs in indoor/outdoor education. No relative degree of importance is indicated by the order in which they are listed.

1. Man is able to damage and destroy the environment and its ability to sustain life. We possess enormous capacity for such destruction through machines and sources of energy only recently invented. We do not know the long-range impact of these activities on the natural environment - evidence indicates that many of our actions may have long-range bad effects.
2. Man is a product of the natural world, and is adapted to it. This adaptation is controlled and perpetuated by thousands of almost unchanging genes. This means that the world environment must be sustained essentially in its natural (i.e., precivilization) state or we, along with most other creatures, will succumb.
3. Man depends on the biological organisms with which he shares this planet for his own health and well-being.
4. Man is himself a biological organism, and his basic bodily needs are the same as for most other creatures.
5. The natural world is extremely complex. Like any complex organism or machine, there are many interacting parts and all parts are interdependent. All parts of the system must function properly or the whole system suffers. (The analogy with the human body, or with our community social structure, works well here.)
6. The proper functioning of one's body, or of the natural world (the ecosystem), depends on the fitness of the structures which make them up. This is easily seen in our own bodies, but may be hard to see in the ecosystem, where the functional parts are difficult to define and harder to analyze.
7. All things in nature must be cycled, so that they can be used over and over again. Some elements are cycled rapidly - carbon, water, oxygen, nitrogen. Others more slowly, through geologic processes- minerals deposited, uplifted, eroded. The materials of the earth are in limited quantities, and must be used again and again. Wastes of human activities must be salvaged and reused if future generations are to have the necessities of life.
8. Diversity is a necessity in the living world. The survival of any species will be in part dependent on the variations which it contains within itself. Man, in his ignorance or for selfish reasons, tends to simplify the world in which he lives, through monoculture of plants and animals, extinction of whole species, and destruction of specialized habitats (such as wetlands).

9. All living things have a right to exist in suitable habitats. Mankind's ability to change the face of the earth must be carefully exercised. Too drastic change is not only detrimental biologically, but may be indefensible morally.

10. Natural environments have important therapeutic effects on urbanized man, as witnessed in literature, art, music, reaction, wilderness, etc.

11. We must have within ourselves a sense of awe and wonder, a humility with regard to ourselves in relation with the natural world. Many of our problems of environmental deterioration are due to man's egotistical "above nature" attitudes.

12. We must translate ideas into feelings. People usually do what they feel like doing, not necessarily what they know they should do. The teacher must keep this fact ever in mind, so as to take advantage of those opportunities whereby students may develop attitudes friendly to nature and natural phenomena.

This editorial has been reproduced from the Summer 1969 issue of Nature Study and was written by John A. Gustafson.

ACTIVITY #1 Signs of Fall: Deciduous and Evergreen Trees

OBJECTIVES:

A student who has been on this field trip should be able to:

Mention ten different things which were observed.
Describe observations as to colors, shapes, and sizes.

THE TRIP:

Colors and leaves:

How many different colors can you find?
Which tree has the brightest yellow leaves?
Which tree has the brightest red leaves?
Which tree has leaves with the most colors?
What color are most leaves on the ground?
What happened to the green color of most of the leaves?
How many trees still have green leaves?
Do you think all of these leaves will turn from green to a different color? Why do you think this?
Will every tree lose its leaves?
Do any evergreens lose their leaves? Find some.
Do all the trees lose their leaves at the same time?
Why do you think this?
Which trees still have most of their leaves?

Pick up 6 or 7 different leaves:

Trace each leaf to the kind of tree it came from.
Did all of the leaves that you found come from trees in the same general area? How did they get there? Replace the leaves that were taken. Ask: "Why should you replace the leaves? Why not burn them?"

ACTIVITY #5 Seed Dispersal: Field & Forest

OBJECTIVES:

At the completion of this field trip, the student should be able to do the following:

Name and describe several methods of seed dispersal.
Given different kinds of seeds common to the field trip area, match the seeds with the trees or other plants that produce them.

THE TRIP:

Look carefully into the air.
From what direction is the wind coming? How do you know?
Do you see anything being blown by the wind?
Do you see anything being carried from one place to another by the wind?
Are these things natural objects or man-made materials? If natural materials, are they animal or plant parts? How can you tell? Do you see any wind-borne seeds?

Walk through a field, along a hedgerow, or some similar area where "weeds" grow.
Examine your clothing. Is anything sticking to your clothing? What is it?
Look carefully with a hand lens at the seeds "sticking" to your clothes. How do they "stick"? Can you find the plants these seeds come from? Do they have seed pods? How do seeds leave the pod?
Can you find a seed that is, has been, or could be wind-borne? What is there about the seed that makes it possible for it to be carried by the wind?
How are these seeds dispersed? Is man the only animal disperser of these seeds? What other animals might do this?

Now that we've seen how seeds of small plants are dispersed, let's examine some tree seeds.
Look at the branches of trees.
Can you find any fruits, pods,nuts?
Examine the ground beneath the trees. What do you see, other than leaves, that might have fallen from the trees? Did you find any seeds or seed castings? Have any of these seeds started to grow? Have you found any tree seeds (such as acorns, beech burrs, hickory nuts, tulip tree seeds, or others) which are not under trees?
What means of dispersal do you think has occurred?

ACTIVITY #9 - WINTER OUTDOORS

OBJECTIVES:

Children should be able, verbally, to describe a field trip and rules for behavior during a field trip.
Children should be able to name the seasons of the year and describe characteristics of the season, verbally, in pictures, in stories.
Children should be able to name three or four sounds heard outside in winter; name colors seen in winter.
Children should be able, by deduction, to identify winter food and homes of birds and animals.
Children should be able to name two or three animals and birds they see, or might see, in winter and give reason why others are not seen.
Children should be able to identify tracks, as such, not necessarily by name of bird or animal, and be able to identify droppings as such.
Children should be able to describe snow as to color and touch and tell where snow comes from and when snow falls in this environment.
Children should be able to define verbally and pictorally what hibernation and migration mean.
Children should be able to identify food sources of birds and animals in winter.
Children should be able to name two characteristics of a creek or stream.
Children should evidence a concept of vocabulary by

a. answering knowledgeably to questions
b. using the word as a normal part of their vocabularies
c. drawing pictures of words or ideas
d. writing a story or dictating a story describing concepts, specimen, season, insect, bird, animal, seeds, nuts, cones, rocks, roots, trunk, branch, twig, bud, seed pod, creek, stream, pond, bare, heat, snow, bush, tree, nest, track, field, forest, food supply, running water, ice, fresh, droppings, park, fur, feathers, hole, feet, beak, pads, hooves, claws, nails, front, hind, tail, fly, soar, flapping, slide, melt, bark, shelter, woods, wooded areas.

THE TRIP

How many seasons of the year are there where we live?
What season is it now?
Look around. Can you tell some things you see or feel today that you cannot see or feel in summer? Today let's look for winter.

Look down. Is winter there? Look up. What does winter look like? Look to the right, to the left. Is winter everywhere? What color is winter? Close your eyes; listen. What are the winter sounds? What don't you hear that you might hear in summer?
Take a deep breath; does winter air feel and taste the same as summer air?

TREES

Do all the trees look the same now as in summer? Where are the leaves that were on the trees?
Are all of the trees bare? Do you see anything on the trees that are not leaves? What shapes are the things on the tree? What are they? Why are they there?
Can you find something on the ground that looks like the seed on the tree?
Put your arms around the trunk of a tree. What shape is the trunk of a tree? Feel the bark. Do you think all bark is alike on every tree?

How can you tell one tree from another?
What do you call the arm-like things growing out of the tree? (branches)
Is anything growing out of the branches? (twigs)
Is anything growing on the tree other than twigs and branches?
What holds the tree in the ground?
Is a tree alive? Then what do all living things need?
How does a tree get the food and water it needs to live?
Do trees get sick like you do?
How many things can you name that might make a home in a tree?
What signs might we look for that a bird or animal uses a tree as home?
Can you find anything that shows that trees and plants are preparing for spring? Will there be leaves on these bare trees when spring comes? Where do leaves come from? Let's look for buds. Have you ever watched a bud open? Will you remember to remind us to watch for opening buds as spring comes?

Now let's see. We know that trees have roots, a trunk, branches and twigs. The outside of the tree is covered with bark. Leaves and seeds or nuts grow on trees. We can tell trees by the difference in color, bark, size, shape, leaves and seeds. Now detectives, you said all the leaves fall off and that birds, animals and insects make homes in trees. Can anyone discover a tree that still has leaves on it? Who can discover something on the tree that is not a bird, animal or insect? (moss, algae, fungi)

Do you see any fallen trees on the ground? Did they all fall in the same direction? Why? Did the roots pull out of the ground? Are there more fallen trees in one area than in other areas?

What might make a large tree fall down?
If no one touches the tree on the ground and you come back when you are grown up, do you think it will look the same then as it does now?

FIELD

Do you see any birds or animals in the field?
What grows in the field? Are all the plants alike? the same size and color? same shape? Are the plants alive or dead? What color do you think they will be in spring and summer?
Is there food for birds and animals in fields?
Do you think any animals would make their homes in fields?
Why don't you see many trees in the field?
If we could dig up some earth in the field what do you think we would find?
Are there as many leaves in the field as there are in the forest? Why not? How did the leaves get here that are on the ground?
Would it be easier for animals to see and be seen in the field or wooded areas?
If you were going to build a house would you build it in the field or woods? Why? If you were out in the fields and woods alone, would you be able to find food and shelter?

ANIMALS

Do you think we can find any birds or animals today?
Will we see as many as we might see in summer?
Can you name some animals that might live here?
If we don't see any animals, how could we discover if anything has been here?
(tracks, droppings) Are the tracks alike? How are they different?
Do animals have to eat in winter? Then where would be the best place to look for animals or signs of animals?
Do you think we might find tracks near the edge of water? Why?
How do animals prepare for winter?
Do you sleep some part of every day? Do animals sleep too?
Does anyone know what hibernation means? Do you hibernate? Why do some animals hibernate?
Would you expect to see more animals when you walk in a small group, alone, or with a large group? Why?
Do you think we would see any baby animals in the winter?
When do most animals give birth to their young? When could you expect to see babies?
Sometimes an animal can be close to us but we don't see it. Why?
How do animals behave when they are afraid?
Do any of the trees or branches look as if they have been chewed? Are the marks high or low on the tree? What does that tell you about the size of the animal?

INSECTS

Could you get stung by a bee today or see a fly?
Where are the insects in winter?
Where do you think we could find some?

BIRDS

Will we see and hear as many birds today as we will hear in spring and summer?
Some birds leave their homes in the fall. Where do they go?
Why do they go? What is their trip called? When do these birds come back?
How can we tell if there are birds here?
Do all birds look alike? Do they sound alike?
Where would we find winter homes of birds?
Do birds have to eat in winter? What do they eat? Then where is the best place to look for birds?
How many legs does a bird have? What enables a bird to fly?
Put your arms out and pretend they are wings. Flap your wings. Now glide and soar.
What does a bird have on the outside of its body?
What happens when you get near a bird? Listen to the songs of the birds.
Do the sounds change as we approach? Why do birds fly away when they hear a noise?
What might we see on the ground that could tell us the type of bird that has been here before us? (tracks, droppings, nest)

CREEK AND POND

Do you see any running water? What do we mean when we say "running water"? Does water have legs? What do you call this kind of water? (creek, stream, pond)
What kind of noise is the creek making today? Is it quiet or "laughing"?
What do you see on the bottom of the stream?
Where are all the animals now that you can find in the creek in summer?
Is the stream clear or muddy?
Is it full or shallow? Why is it full or shallow? Where does the water come from that fills the stream or pond?
When the water hits the stones and rocks on the bottom, what happens? Is the water frozen? Why or why not?
How is a stream different from a pond?
Can animals live under the water when it is winter?
Does the ground feel the same under your feet near the edge of the pond or stream?
Where does this water go?

FOOD

If you were a bird or animal and you were hungry, where would you look for food?
Why are some nuts and berries still on the trees and bushes?
Can you find a nut on the ground? Is there anything in it?
Can you find any seed or nuts that have been opened?
Who opened them?
What do you call the outside of a nut?
Do you like some foods better than others? Do you think all birds and animals like the same food?
What do you suppose would happen if all animals and birds ate the same food?
Could you find a bird or animal more easily if you knew the type of food it liked to eat?

IF THERE'S SNOW

How would you describe snow to someone who has never seen it?
Where does snow come from?
What is snow? (Condensed water vapor in clouds is exposed to freezing temperatures and becomes snow. Air is held between snow crystals within angles and acts as insulation.)
What happens to snow when you hold it in your hand?
How can you tell when something has walked on the snow? Do all tracks look alike? Describe any tracks you find. Look at your own tracks; do they look like animal or bird tracks? What do you have on your feet that would change the track made by you in winter and the one made by you going barefoot in the summer?
Why do tracks change in the snow?
Is the snow level wherever you look?
Where is the snow deepest? Why?
Why are some areas bare and some places piled high with snow?
How do birds and animals find food when there is snow on the ground?
Is food easy to see when there is snow on the ground?
Is there snow on the trees?
Describe the sound your feet make when you walk on snow.
Is the snow hard or soft on top? Is this new snow or has it been on the ground for awhile?
Do you see any signs of snow melting?
Will you be able to see tracks better in fresh snow or "old" snow?
Do you see any green plants? Look carefully; what is happening to the snow around each plant? (small melting circle) What melts snow?
Then do plants give off heat?
Where would you look for animals today? Where would be a good place for animals to stay?
What helps keep animals warm in winter?

ACTIVITY #10 - OBSERVING BIRDS AT A FEEDER

OBJECTIVES:

Children should be able to describe verbally birds as to general color, size, shape, and shape of beaks, legs, feet, color under tail feathers, wing bars, eye rings, voice, action.

Children should be able to identify bird on bird chart after observation.

Children should be able to name the number of toes and describe the toe position when bird is standing.

Children should be able to describe the difference between the male and female of the same family.

OBSERVATIONS:

1. Watch birds at a feeder.
2. What is the color of the bird? Is it big or little?
3. What is the color and shape of the beak?
4. Look at the legs and feet. Are the legs long or short compared to the body? What color are the legs? How many toes does the bird have?
5. What makes this bird different from other birds at the feeder?
6. How are the birds alike?
7. Look for special markings on the head, back, top and bottom of tail feathers.
8. Does the bird pick up the food and fly away? Does it eat the food at the feeder? How does it open the seed?
9. If there is a variety of food, does every bird eat the same food or do some seem to prefer one type of food to another?
10. Why is suet hung on feeders?
11. If people do not feed birds in winter, how and where do they get the food necessary to survive?
12. Do birds need water as well as food? Where do they get water in winter?

ACTIVITIES:

1. Go to bird chart, review characteristics of bird (s) watched, and identify the bird seen by name.
2. (Classroom) Write an experience chart. Using the child's name before his or her sentence heightens interest. Example: John said, "Our class took a trip." or Mary said, "We watched birds feeding at a bird feeder."
3. Keep a large class record on bulletin board. Name of bird - where we saw the bird - date we saw the bird - time we saw the bird - what the bird ate - picture of the bird - special characteristics.
4. Children can make a book about birds, drawing pictures and noting details in the picture - color, seen in the air, tree, ground, feeder, etc.
5. Teacher can make enlarged outlines of beaks, body, feet and have children match pieces and identify the bird by name.
6. Place pictures of birds on bulletin board. Fold a large piece of paper in half, paste picture on underside with name of bird on top of card. Have child read the name, lift to see if he is correct. Reverse card, have bird picture on top, name the bird, raise to see if answer is correct.
7. Make a blank scene with ground, tree, sky. Have children fill in pictures of bird seen, where seen, when seen, observer's name.
8. Make up a song or poem about birds seen.
9. Make up riddles and ask class members to answer by holding up cards with bird name on it. Example: I am a small bird with a black cap. Who am I?
10. Make an alphabet book of birds (good for animals and plants too).
11. Make bird feeders in the room for school or home use.
12. Collect natural food for feeders and note which food is eaten by what bird.

ACTIVITY #12 Signs of Spring

OBJECTIVES:

Children should be able to name the seasons of the year and describe characteristics of the season, verbally, in pictures, in stories.
Children should be able to name three or four sounds heard in the spring and name colors seen in spring.
Children should be able, by deduction, to identify spring food and homes of birds and animals.
Children should be able to name two or three animals and birds they see, or might see, in spring.
Children should be able to identify tracks, as such, not necessarily by name of bird or animal, and be able to identify droppings as such.

Children should be able to identify food sources of birds and animals in spring.
Children should be able to name two characteristics of a stream.
Children should evidence a concept of vocabulary by

a. answering knowledgeably to questions
b. using the word as a normal part of their vocabularies
c. drawing pictures of words or ideas
d. writing a story or dictating a story using: specimen, season, insect, bird, animal, seeds, nuts, cones, rocks, roots, trunk, branch, twig, bud, seed pod, creek, stream, bare, heat, snow, bush, tree, nest, track, field, forest, food supply, running water, ice, fresh, droppings, park, fur, feathers, hole, feet, beak, pads, hooves, claws, nails, front, hind, tail, droppings, fly, soar, flapping, glide, melt, bark, shelter, woods, wooded area.

Children should be able to name animals they might see in spring and animals they would not see and explain why.

THE TRIP

TREES

Something very different has happened to this area since winter. Look at the trees. What do you see now that we did not see in winter? What colors do you see now? Are all the new leaves the same color? Where did the leaves come from?
Do all of the trees have new growth?
How do trees "know" it is spring and time to wear their leaves and flowers? Do they have clocks inside or a thermometer? Why do you suppose we see the grass getting green and new growth on bushes and trees in spring?
Do you think the tree is larger now than it was last spring?

Do you see any branches that do not have leaves or buds growing? branches that are still bare?
What do you suppose happened to them?
Can you find anything on the branches that is not a leaf?
Now, do you suppose you could find three trees with different types of bark? different leaf growth? different flowers or seeds?

ANIMALS

Do you think we might see some animals today? Would this be a good time of the year to see baby animals? What animals live here? Could we discover any signs of animals even if we don't see the animals themselves? Pretend we are quiet Indians tracking animals. What would you look for? Where would you look? If we got close to a nest where a mother had some babies, what do you think the mother might do?
Do you think you would find more animals under the ground? near trees? in trees? in the open fields? near water? How would an animal feel if it heard many feet and voices getting near its nest? What do you do when you are frightened? Where would be a good place to look for animal signs?

BIRDS

Stop; close your eyes; listen! Pretend you are a stone statue and the only thing you have are two ears that hear. Open your eyes. What made the sounds you heard?
Do you hear more birds now than we heard in winter? Why? What is migration? What bird is one of the first to return to our area in spring?
Now you are a statue again. This time you can hear, see and turn. Can you see any birds? If you see one, tell us where it is, what color it is, what size it is, and what it is doing. Do you see a nest? What might be in the nest in the spring time? What do birds eat? How do baby birds eat after they come out of the egg? Can baby birds fly when they are born? How would a mother bird react if you went near her nest?
Do all birds sing the same song? If we cannot see a bird, could the bird be identified by its call?

INSECTS

If you were here in the winter, you probably didn't see any insects. Where were they? Could you see some now? Why? You may have hitch-hikers on you when our trip is over (ticks). If you find an insect, look at its color, shape, location, size, and count its legs.
Did you know there are more insects in the world than any other kind of animal life? Why do you suppose there are more insects in our woods than any other animals or birds?
Are insects large or small? Do they eat animals or plants?
Are they food for anything else?
Where would be some good places to look for insects? Why?

ACTIVITY #13 Signs of Spring: Spring Green

OBJECTIVES:

While on the trip, students should be able to pick out three leaves with differing shades of green and three leaves with differing textures.

Children should be able to describe leaves in terms of color, texture, and possibly odor.

Children should be able to write a description of spring, involving observations made using their senses.

Following the trip, children should demonstrate an increased awareness of variations within colors by comparing the colors in their clothes and in their environment.

THE TRIP:

See something green!
What color do you think of when you think of spring? Are all greens the same? Try to describe any differences you see. Do different plants have the same kind of green? Can you find more than one kind of green on one plant? Do some plants have different degrees of green on the upper and undersides of their leaves? Are the leaves or buds the only parts of the plants that are green?

Are all buds green? When you look up toward the sky, do all the trees look green at the top? Describe some of the differences. Do you see any buds that are brown? Do you see any buds that are red? orange? Can you find, closer to eye level, any opening buds with a brownish or reddish color? What part of the bud is that color?

Do all plants become green at the same time? Look at the tops of the trees, the shrub layer, the ground layer. Have any plants already bloomed? What makes you think so? Are some plants in bloom now? Can you find flower buds on some plants? Do some plants seem to be coming up just now? Do you think all of these plants started getting green at the same time? Why or why not?

Can you find any leaves on the ground? Are they green? Were they once green? What makes you think so? When? How do they feel? Feel some green leaves and describe how the green ones feel compared with the brown ones.

Feel something green! Rub the surfaces of some of the leaves. Try to describe how several feel. Can you find leaves that feel smooth, sticky, fuzzy, bumpy, glassy, waxy? Does the undersurface feel like the upper surface? Does the leaf feel the same when you rub your fingers along the leaf from the tip to the stem as when you rub your fingers across the leaf from one side to the other? Do you see anything on the leaf that makes it feel the way it does? Look at the leaf after you rub it. Is it the same shade it was? How do your fingers feel?

Hear something green! Rub your fingers along and across some of the leaves again. Do you hear anything? Try to describe the sound. How is what you hear explained by what you feel and see? How does a handful of green leaves sound compared with a handful of brown leaves?

Smell something green! How would you describe the smell of the leaves on the ground? Do the new leaves smell like this? Can you find leaves with different smells?

ACTIVITY #14 Signs of Spring (Plants)

OBJECTIVES:

Children should be able to:

Distinguish the signs of spring exhibited by plants through use of the following senses: sight, touch, smell. List adjectives describing the signs of spring as observed through the senses.

THE TRIP:

Which parts of the plants and trees show "new growth"?
Have students feel "new growth".
How does it feel? Does it feel the way it looks?

Smell the leaf or buds. Do you recognize any of the smells? Can you find things that smell sweet? Can you find anything that has a smell you don't like?

What will happen to the trees next fall? Will they die? How will they look next spring? Will the same thing happen to other plants?

ACTIVITY #15 Signs of Spring or Fall

OBJECTIVES:

Students should be able to relate five observations (involving at least three of their senses) that are "signs" of the season.

THE TRIP:

How can we observe signs of fall? spring? Can we feel fall? spring? What feelings do you notice? (Sun, wind, rain, warmth, etc.) Are these different now than they were last season?

Try feeling various items at hand - trees, rocks, water, grass, weeds, rose bush, earth, etc. Can you feel differences between them? (Describe them.)

Can we smell fall? spring? Do you smell anything now? (Try smelling flowers, garlic, skunk cabbage, damp earth, etc.) Can you find anything nearby that has an odor? Are these odors different? Can you describe the odors?

Can we hear fall? spring? Be very quiet and listen. (You might make a list of what you hear.) Which of the sounds that you hear would you probably not have heard last season? Where do sounds come from? Which sounds are man-made? Which are from birds, insects, frogs, other animals? Which are made by non-living things? Try to describe what some of the sounds say in your words. (Birds might be easiest to start with.) Try to imitate some of the sounds. How do sounds differ in quality?

Can we see fall? spring? What colors can you see? How do they differ from the colors of other seasons? (Or the colors of two or three months ago?) Is the grass all green; all the same color of green? Is the sky blue? What colors do you see in flowers? in trees? What color is sunshine? What color is rain? What color are clouds?

What shapes can you see? Are all trees shaped the same? What shape is a leaf? Draw some leaf outlines. What shape is a flower? What shape is a cloud? Can you find a triangle, a rectangle, a square, a circle, etc. in any of these?

What sizes can you see? What are some things you can see starting with the biggest thing and getting smaller until you reach the smallest thing you can find? What things can you see that can be both big and little?

What patterns can you see? Can you find a tree that looks like something else? Can you see patterns in clouds, rocks, grass, water, etc.? Can you see patterns in plants, birds, insects and other animals?

How do you know it's Spring
and how do you know it's Fall?
Suppose your eyes were always shut
and you couldn't see at all.
Could you smell and hear the Spring
And could you feel the Fall?

Margaret Wise Brown

ACTIVITY #22 Fungus on Log

OBJECTIVES:

When asked to give some words describing an object in nature, the student should include in that list adjectives that demonstrate the use of the senses: sight, smell, touch and hearing.

THE TRIP:

Draw attention to fungal growth on a fallen tree.

What color is it? Is it wet or dry? hard or soft? Does it look the same on all sides of the tree? Does the top side of the growth look the same as the bottom side?

Feel the growth. Is it rough or smooth? Does the growth feel the way it looks? Does it feel the way you thought it would feel?

Pull a small piece of the growth from the tree. Squeeze it. What happens when you squeeze it? What happens when you release it?

How does the growth smell? (NOTE: Caution your students about breathing in spores if the fungi has matured.) Try to describe it. Do you know of anything that has a similar smell?

Have you ever seen anything else that looks like this growth? Feels like it?
Is the log alive? Do you see any other trees nearby with the same type of growth? Are they alive?

ACTIVITY #26 Seed Dispersal

OBJECTIVES:

After observing plants and their seeds children should be able to:

Match 4 or more different kinds of seeds with the plants from which they came.
Construct a display of plants and their seeds.

THE TRIP:

Do you see any seeds on the ground that are not attached by roots? Do you see any flying in the air that look as though they could be coming from this area? What do they look like? Have you ever seen anything before that looks like this? Where? Where do you think this is coming from? Give some reasons why you think so.

Are there any seeds on the ground? Can you see them on trees, bushes, plants? Do you think they are alive? Check your clothes for any "hitchhiking" seeds. How are they attached?

Divide class in two or three groups to try to find where these seeds are coming from.

If someone does find where they are coming from, ask if they know why this is happening and what might become of these seeds.

What else could carry seeds besides the wind and people?

ACTIVITY #28 Comparing Plants

MATERIALS NEEDED:

OBJECTIVES:

Children should be able to:

Point out three things which the plants they observed have in common.

THE TRIP:

Spend about ten minutes looking.

Find the biggest plant.
Find the smallest plant.
Find the leaves on each. How are they the same? How are they different?
Find the stem on each. How are they the same? How are they different?
What color are the plants you found?
Find three plants that you think are different.
Can you find three things which all the plants you have seen have in common?
Do you think all the plants in the world are alike in these ways? How could you find out if they are not?

ACTIVITY #33 Trees: Color, Shape, Texture

OBJECTIVES:

During this field activity, children should be able to:

Observe tree parts and note colors, shapes and textures.

THE TRIP:

Each child selects a tree to observe and makes notes in answer to these questions about it.

Touch the bark. How does it feel? Describe it.
Is it smooth? papery? rough? deeply grooved?
What colors can you see in the bark?
Note the shape and color of leaves. Describe.
Do you think this is a young or old tree? How can you tell?
Does it have many or few branches? How are the branches arranged?
How does the bark of the branches differ from the bark on the trunk? Look at the end of a twig.
Look at the rest of the branch. Are both the same color?
Based on the change of color can you find how much growth there has been this year? Can you see any of the roots? Do they have bark on them?

Supply each child with ample plasticine clay for him to make a print of the bark texture. The clay prints should be placed each in a separate box for the return trip. After returning to the classroom, apply ink or tempera to mold and print onto construction paper.

ACTIVITY #45 Animal Homes

OBJECTIVES:

The children should be able to locate animal homes and identify what animals might live there.

THE TRIP:

Divide your class into small groups. Allow a period of five to ten minutes for the children to locate animal homes. Call all of the groups together and discuss what has been found. Let each group conduct a tour of its area.

Of what are the homes made?
Can you see where the materials were found?
Can you see any building materials that have come from some place other than the surrounding area?
Do you see any homes the animals live in but did not build?
What objects do you see in the shelters?
Did the animals bring them there?
How are the homes different?
What homes can you see that are high above your head?
What animals can be found on or near the ground?
What do you notice about the size, color, and position of the animal shelters that helpsto hide them?
What animals have you seen around your home or school that could use the animal homes we have seen.

ACTIVITY #48 Birds

MATERIALS NEEDED:

Pencils, paper

OBJECTIVES:

Students should be able to:

> Compare two or more habitats of birds, describing similarities and differences of these habitats.
> Describe differences observed in the birds of these habitats.

THE TRIP:

How many different kinds of birds do you see? hear? In what different places do you look to see birds?
Why are some birds easier to see than others?
Compare the sizes of birds.

Give several ways in which the birds you see and hear differ from each other.
Do you see any likely nesting places? In what ways do they look alike? different?
If you see a nest and can look at it without disturbing the birds, try to see what the bird used in building the nest.

Have students observe the flight of birds. Do all birds fly the same way? How do the flight patterns of birds differ? Encourage students to use their arms to demonstrate several flight patterns.

ACTIVITY #57 Comparison of Woods, Fields and Marsh

OBJECTIVES:

Children should observe several relationships between plants and animals.
Children should know a plant found usually in the woods, another found in a field, another near a marsh.

THE TRIP:

Plants

What is there about the plants in this area that is different from plants in other areas: size? shape? color?

How many different colors can you see? (Ask this question in several areas during walk).

Have children make up names for the plants (if they don't know given names) that would help to identify them at a later time (e.g., umbrella plant for mayapple - tooth plant or saw-edged plant for toothwort).

Observe different plants in different locations throughout tour.

Look at trees in areas visited. What do you notice about the trees? buds? flowers? leaves? Compare the colors, sizes, and shapes of the leaves or buds. Does the texture of the bark change? Do you see signs of birds in the trees? signs of other animal life? Are there stumps with animal homes? fungi? insects?

Find holes in the field. Could they be animal homes? What else might they be? Do you think they are recent holes? Are there signs of present inhabitants?

Birds - do you hear or see them? Are there different kinds? Do you see any nests?

Where can you find insects: in stumps? on plants? on trees? on the ground? in the ground?
Observe plant and animal life in a stream or marsh.

Are there different types of plant and animal life in streams or marshes than are in the woods and field?
What are some of the differences?

ACTIVITY #74 Rainy Day

OBJECTIVES:

The student should be able to describe characteristics of the area observed that are present only during rainfall.

THE TRIP:

What sounds do you hear as you walk in the rain? What sounds do you hear when it is raining that you wouldn't hear when it is dry?

Are the sounds of rain the same everywhere you walk? How are the sounds alike? different? Where do the sounds of rain seem to be the loudest?

Look at your footsteps as you walk. Do they look alike everywhere you walk? Do they sound the same? Do they feel the same? Would you see these things if it were dry? Does it have to rain in order for you to see these things and hear these sounds?

What words describe the sounds you hear and the things you see as you walk in the rain?

ACTIVITY #78 Windy Day in a Forest

OBJECTIVES:

Students should be able to notice changes that occur in a forest on a windy day. The student should be able to describe verbally four observations he made when the wind was blowing and compare them with observations made during a period of relative calm.

THE TRIP:

How many different sounds can you hear when the wind is blowing?
Can you hear the same sounds when the wind isn't blowing?
What happens to the trees when the wind blows?
Can you tell the direction of the wind by watching a tree?
How?
Does the wind always blow in the same direction?
Can you feel the movement of a tree by touching the trunk of the tree as the wind is blowing? What part of a tree sways most?
Can you tell the speed of the wind by looking at a tree?
Do all trees move when the wind blows? Do all trees move the same?
Which trees move most when the wind blows? What words describe the trees that have the most movement when the wind blows?
How could the wind be damaging to the trees?
Can you find any trees or parts of trees that might have been blown down by the wind?

ACTIVITY #81 Characteristics of Rocks

OBJECTIVES:

Children should be able to:

Use senses of sight and touch in examining rock specimens. Orally describe characteristics of rocks, mentioning facts determined through the senses of sight and touch. Suggest ways rocks may have been carried from place to place.

THE TRIP:

Find a rock. Describe the outside of the rock you found.

What color is it? Is it the same color all over? Is it a solid color or speckled rock? Do you think it is the same color it was years ago?

What is its shape? Is it round, rectangular, or square? Is it shaped like a ball or an egg? Are the edges smooth or sharp?

How heavy is the rock? Is it the weight of a baseball, an egg, or an eraser? Is it too heavy to lift?

Feel your rock. Is it smooth or rough? Is it porous? (Note: This word may have to be defined.) Is it crumbly? Is it sandy? Is it like anything else you have felt?

How do you think the rock came to the place where you found it? Are there larger rocks near this rock?

Does this rock look and feel like the larger rock? Are there other pieces of the larger rock nearby?

Might it have been carried here by a stream? by gravity? by man?

ACTIVITY #85 Shapes and Patterns

MATERIALS NEEDED:

Pencil and paper

OBJECTIVES:

Given a set of articles in a natural environment, students should be able to list them in order of relative size, from the largest to the smallest.

Students should be able to find leaves with at least three different shapes and be able to sketch shapes seen in flowers, trees, clouds, and other natural phenomena.

THE TRIP:

What shapes can you see? Are all trees shaped the same? Sketch a few. What shape is a leaf? Trace at least three leaf outlines. What shape is a flower? Can you find one that is bell-shaped, triangular, round? What shape is a cloud? Try to sketch some. What happens to the clouds as you draw? Can you find the shape of a triangle, a rectangle, a square, a circle, etc. in what you see?

What sizes can you see? List some things you can see starting with the biggest thing and getting smaller until you reach the smallest thing you can find. What kinds of things can you see that can be both big and little?

What patterns can you see? Sketch some. Can you find patterns in the bark of trees? Can you see patterns in plants, birds, insects and other animals?

Can you find a tree that reminds you of a figure, a vase, etc.?

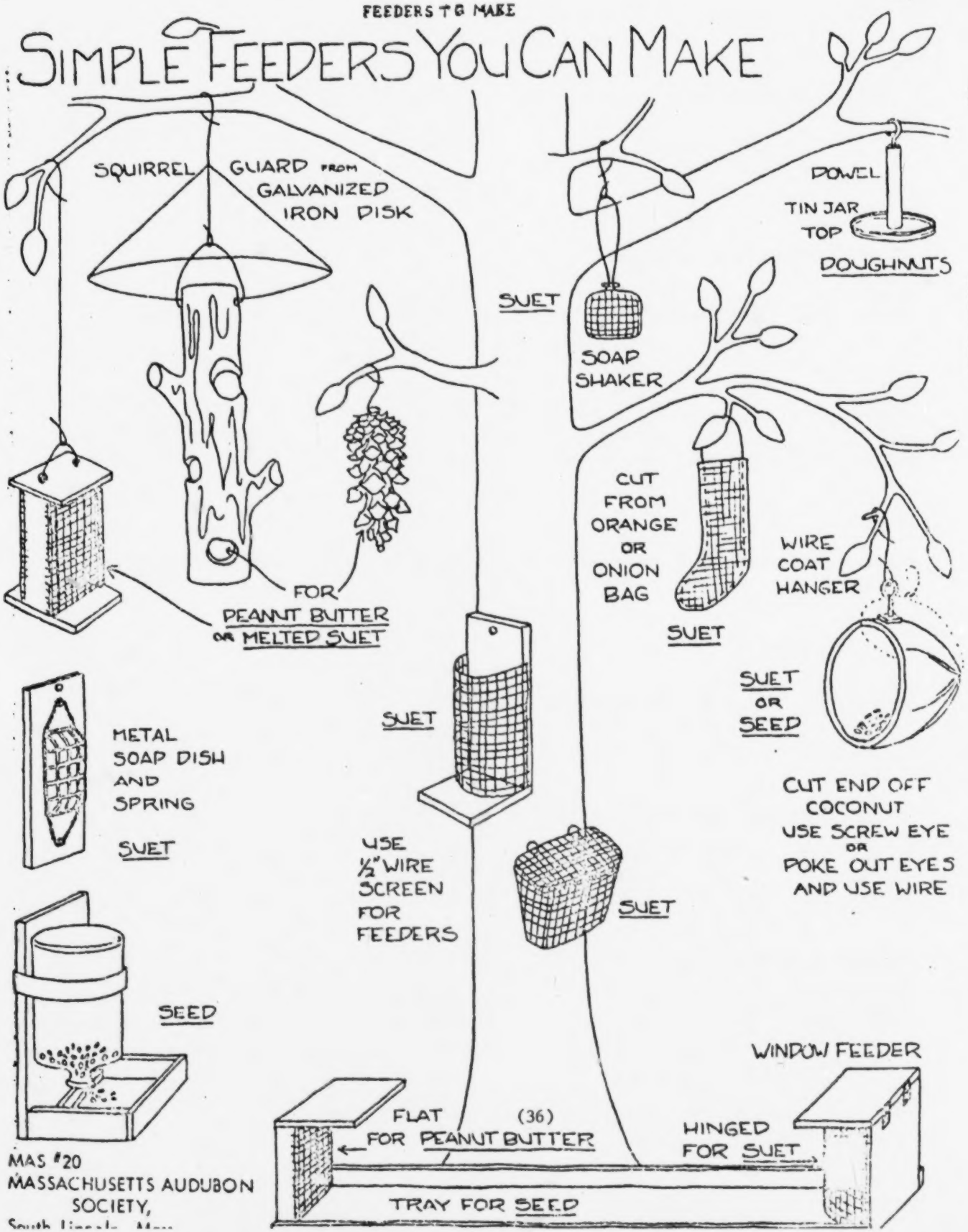
Can you find a texture in some natural object that you would like in cloth? What would you make from such cloth?

FOLLOW-UP MASTER KEY
LEVEL I

	Page	Title	Level K	1	2	3	4	5	6	Season*	Activity
Seasonal Follow-Up Activities											
FLP#8	10f	FEEDERS TO MAKE	x	x	x	x	x	x	x	F,W	4,7,9,10
FLP#13	16f	DESCRIPTIONS	x	x	x	x	x			All	12,13,59
Flora											
FLP#14	17f	FUNGI		x	x	x	x			F	24
FLP#26	34f	LEAF OUTLINES	x	x	x	x	x			F,Su	1,6,28,33,34
FLP#27	36f	VENATION	x	x	x	x	x			F,Su	1,6,28,34,86
Fauna											
FLP#44	59f	ANIMAL HOMES		x	x	x	x			F,Sp,Su	12,44,45
FLP#45	60f	BIRDS		x	x	x	x			All	10,48
Habitat Studies											
FLP#56	76f	FALLEN TREE	x	x	x	x	x			F,Sp,Su	22,34,60
FLP#59	80f	MEADOW FOOD CHAIN	x	x	x	x				F,Sp,Su	5
FLP#60	81f	FOREST FOOD CHAIN	x	x	x	x				F,Su	57
FLP#61	82f	AQUATIC FOOD CHAIN	x	x	x	x				All	57,58
Weather, Geology, Soils, Hydrography											
FLP#67	89f	AFTER THE RAIN	x	x	x	x				F,Sp,Su	73,74,77,82
FLP#68	92f	WIND	x	x	x	x	x	x		All	75,76,78
FLP#70	95f	BERLESE FUNNEL	x	x	x	x	x	x		F,Sp,Su	55,82
Awareness, Man and Nature											
FLP#75	101f	USING YOUR SENSES	x	x	x	x	x			All	13,14,15,87
FLP#77	103f	ANY BUS TRIP	x	x	x	x	x			All	54,85

* F=fall, W=winter, Sp=spring, Su=summer, All=all seasons

SIMPLE FEEDERS YOU CAN MAKE



MAS #20
MASSACHUSETTS AUDUBON SOCIETY,
South Lincoln, Mass.

FOLLOW-UP # 13 Descriptions

Write a group story using as many descriptive words as possible to describe

smells
colors
textures
sizes

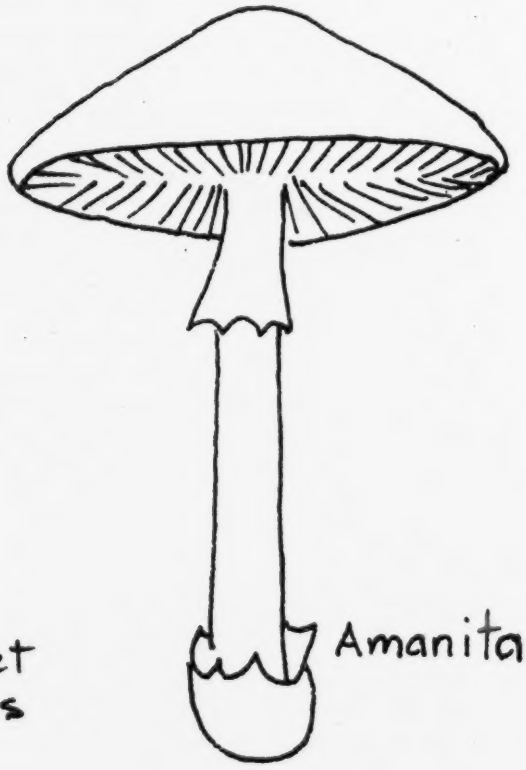
Example: We went on a field trip.
We saw big trees
tall trees
short trees
green trees
brown trees
wide trees
thin trees

The kinds of bark on the trees were different.
Some bark was smooth
rough
bumpy
lumpy

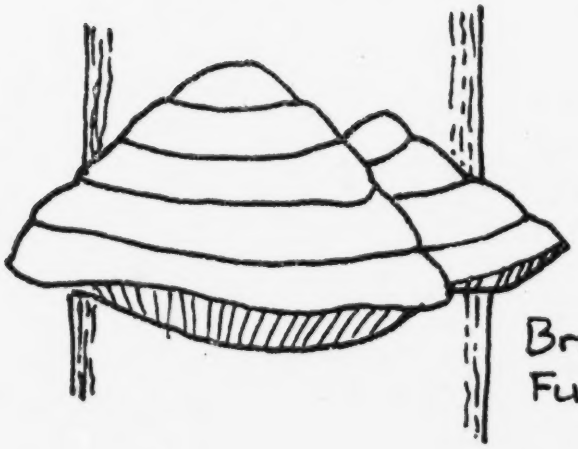
Locate fungi that resemble those pictured below:

Morel

Puffball

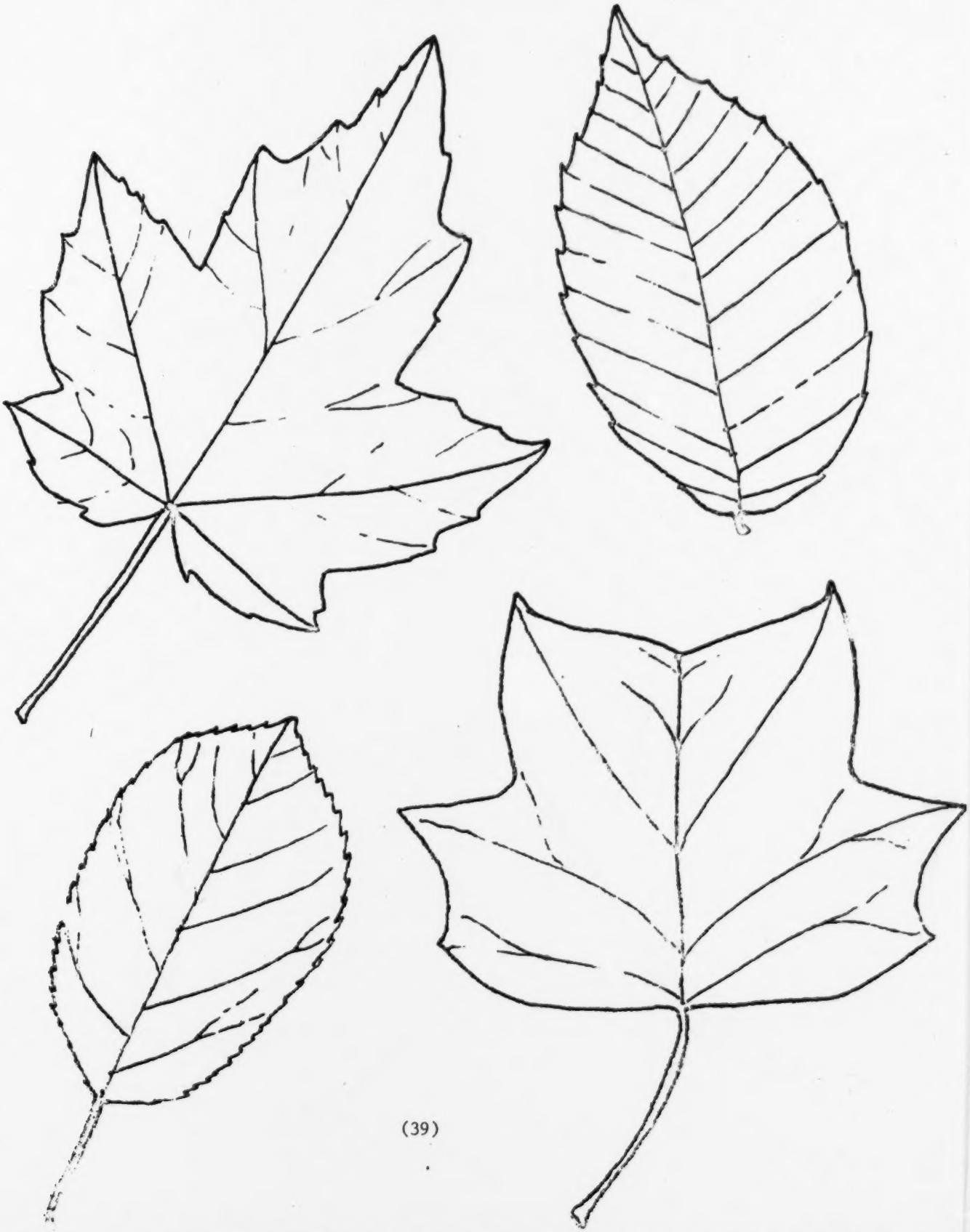


Amanita

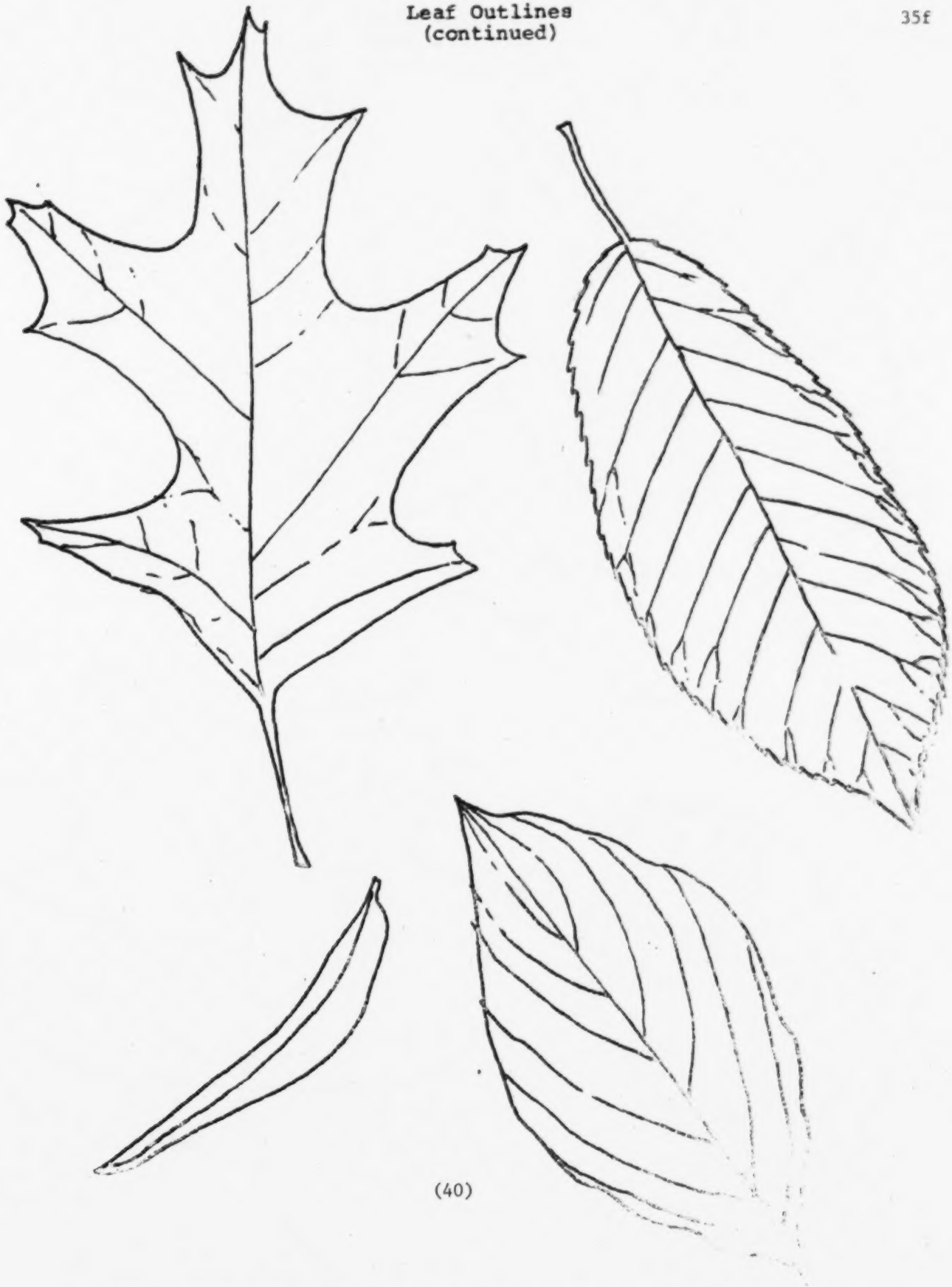


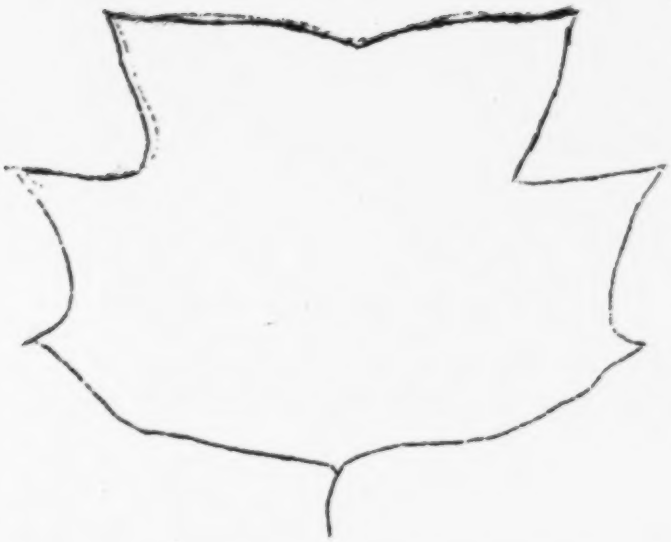
Bracket Fungus

FOLLOW-UP #26
Leaf Outlines



FOLLOW-UP #26
Leaf Outlines
(continued)





Find a leaf like this TULIP TREE leaf and draw in the veins.

Find a leaf like this BEECH TREE leaf and draw in the veins.

Find a leaf like this SASSAFRAS TREE leaf and draw in the veins. Are all the leaves on this tree the same shape?

Find a leaf like this PIN OAK TREE leaf and draw in the veins.

- N. Heule -

FOLLOW-UP #44 Animal Homes

On the bus:

Have one large size oaktag chart with a list of animals that may be seen in the area. The children could make the list prior to coming on the trip. While on the bus the children should look for animals. Each time one is seen, it is checked on the chart.

In the classroom:

Have the children make or draw animal homes from materials gathered around the school or home. This could be a very effective table display. Attach string from the animal's name to its home.

Read Bambi by Felix Salten. Discuss and compare the animals and their homes in the book with those actually in the woods.

FOLLOW-UP #45 Birds

Make a chart of birds seen or heard during the field trip after looking up further information in bird guides or other sources, and perhaps, listening to tapes or records of bird sounds.

Draw or paint pictures or make clay models of birds, trees, or other aspects of the area visited during the field trip. Write individual experience stories on drawings as child dictates.

Have your class bring in pictures or drawings of birds seen or heard during your trip.

Make a bird chart for comparison of birds in different seasons. Pictures of birds could be used, or children could make some from construction paper.

Discuss what makes a good home for birds and why.

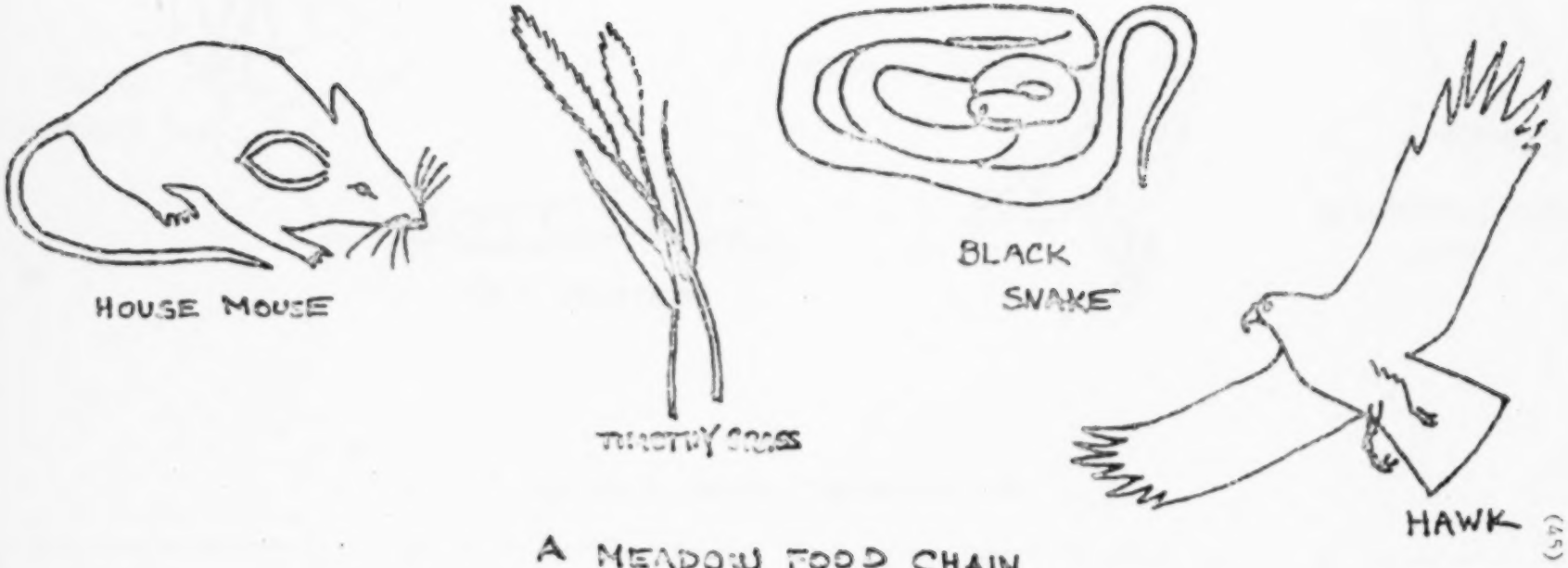
Set up a bird feeder near your classroom for students to observe birds. Find out what kinds of food birds like to eat.

FOLLOW-UP # 56 Fallen Tree

How does a fallen tree contribute to the forest community? Circle all the clues you can find in the picture. (Be ready to tell what you think they tell.)

Add anything else you have observed living on, in, or near a fallen tree.

FOLLOW-UP #59 Meadow Food Chain

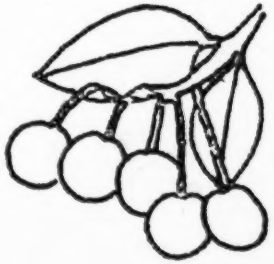


A MEADOW FOOD CHAIN

FOLLOW-UP #60 - Forest Food Chain

GREAT HORNED OWL

WOOD THRUSH

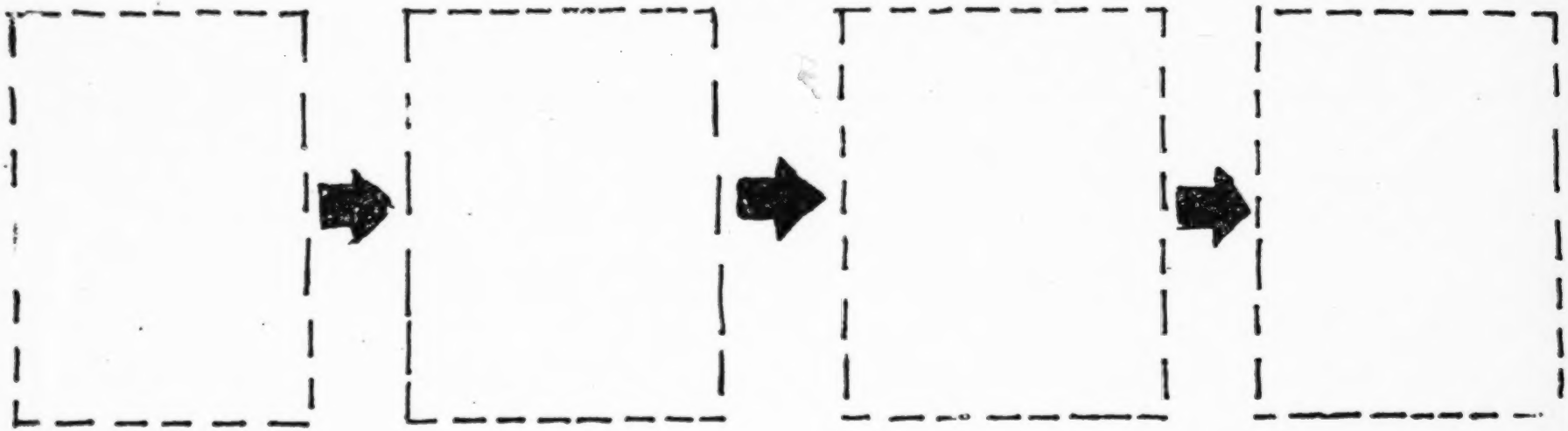


WILD CHERRY

CATERPILLAR

(49)

A FOREST FOOD CHAIN



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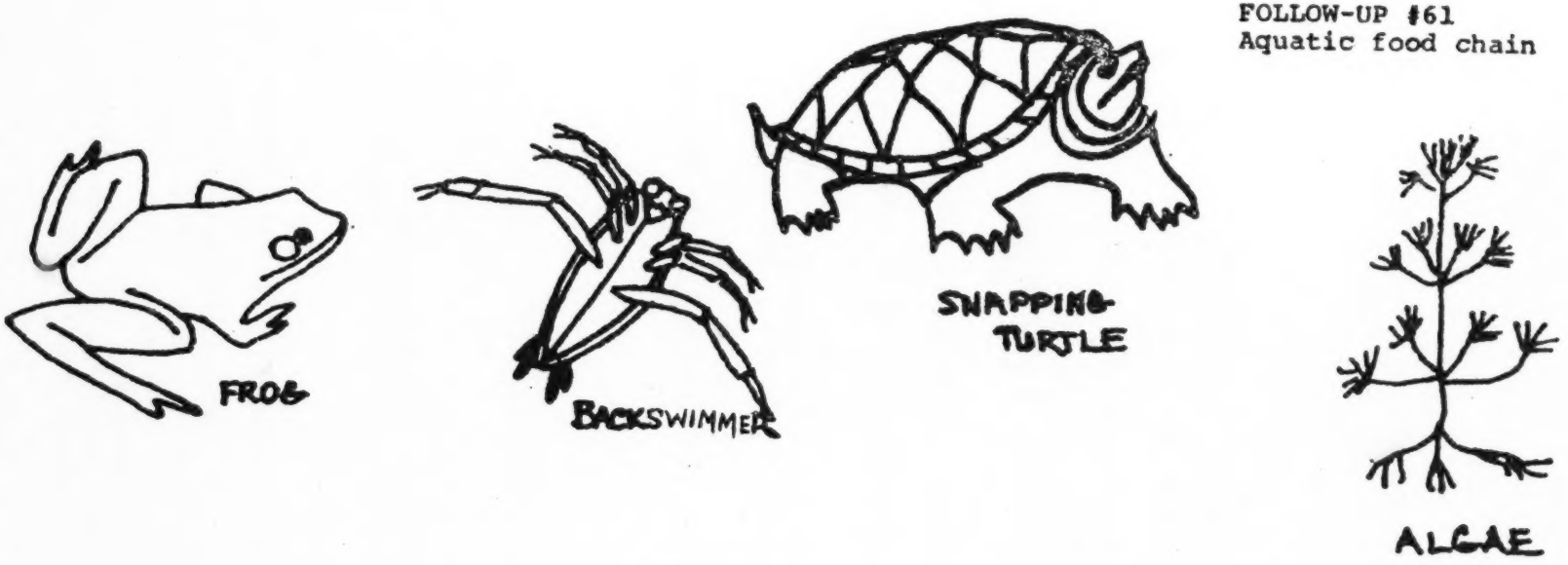
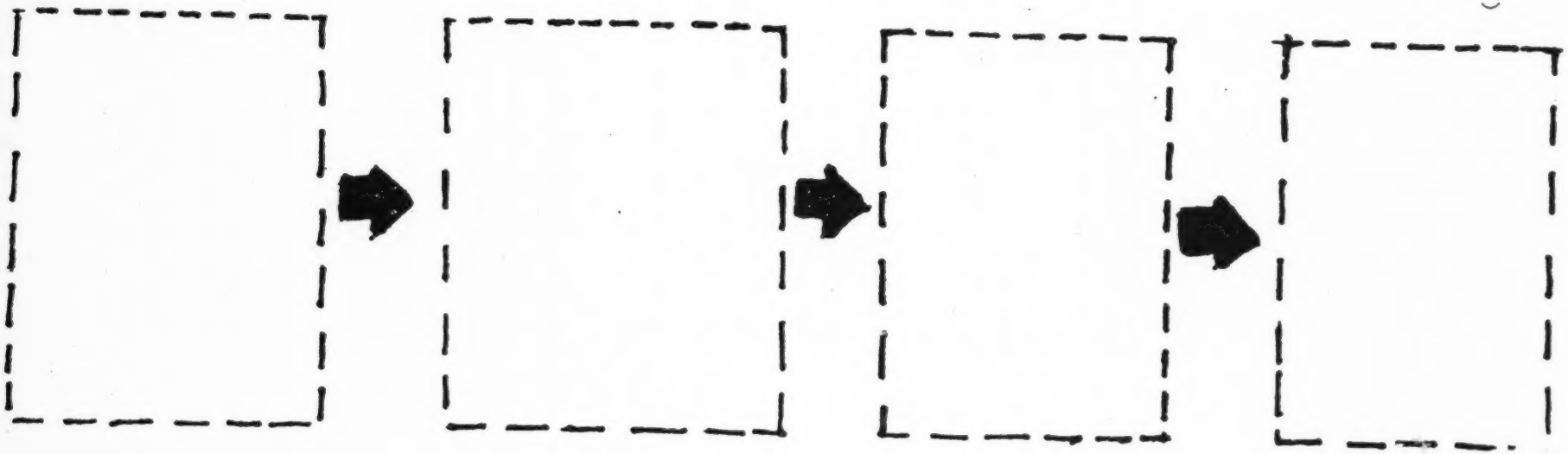
L. BERG

FOLLOW-UP #61
Aquatic food chain



AQUATIC FOOD CHAIN



FOLLOW-UP # 67 After the Rain

On the bus

What did you like about being outdoors in the rain?
What was the most interesting thing you discovered?
What would you like to do in the rain the next time?

Watch for people and animals that are out in the rain.
How are they prepared for the rain?
Do they seem to enjoy being in the rain? Why do you think so?
What usual things are people and other animals not doing because it is raining?

Listen to rain sounds on the highway. What makes these sounds?

How does the rain affect the colors of the roads, the buildings, the cars, that you see?

Watch for creeks, waterfalls. If you have passed by streams recently, compare the amount of water you see today with what you saw then.

Watch for "surprise waterialls" in places where there usually aren't any.

In the classroom or at home

Draw a picture of the surface of the pond in the rain.
What color paper would you use?

Where are the neighborhood puddles? Why?
Is it good or bad that puddles form in these places?
What else is in the puddles besides water? Where did it come from?

Study a topographical map of your community and the surrounding area.
Where does the water go that you saw in the creeks? Why?
Where will the water from the pond go?

Pour water on different kinds of surfaces.
Does the surface get "wet all over" or does the water bead?
What can you find out about the surface that helps explain this?

Why does your mother wax the kitchen floor?
Why does your dad wax the car?
Help them next time and repeat your experiment.

What happens when you submerge the leaves of different kinds of plants?
How does being wet affect the appearance of other things: cloth, wood, blackboard, clay, etc.? Can you find out why this happens?

How does being wet affect the smell of things: chalk? the blackboard? window screens? wool? Why might this be?

Burn some leaves under the supervision of your teacher or parents. Pour water on the ashes. Try to describe the smell.

Explore your back yard or the schoolyard the next time it rains. What new discoveries can you make?

Catch and measure raindrops. (See How Big Are Raindrops by Phyllis Busch)

After a rain dig into the earth at different spots.
How deep did the rain go?
Are all places wet to the same depths?
What seems to have caused the differences?
What effect do these variations have on plants and animals?
Repeat this activity at different seasons of the year, after similar rains.

Arrange a bulletin board display of rain pictures.

Read poems about the rain. Try writing some.

Watch the film "Rainshower".

Compare the leaves of plants you saw in the rain with the same types of leaves when dry.
Can you find clues in the texture that suggest why water beads, or does not bead, on each?
(Interesting leaves to observe are clover, mullein, thistle, hawkweed, lamb's quarters, barberry, spirea, roses, different kinds of grasses.)

What is rain?

Collect some in a sterilized jar, cap it, and observe it for several weeks.
(How to sterilize a jar: Heat it in an oven or ask your mother to tell you how she sterilizes jars for preserves.)

If you have a camera, try taking pictures just after a rain. Perhaps you can take a picture of a puddle or a spiderweb spun of raindrops or leaves wearing diamonds.
No camera? - pen and ink, a pencil, some colored chalk can be your challenge.

FOLLOW-UP #68 Wind

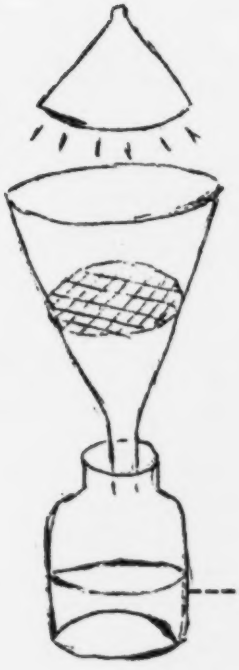
Do buildings sway in the wind? Do flagpoles? Do electric and telephone poles? What would happen to a tall, rigid object that did not sway? Can you design an experiment to demonstrate this?

Investigate the construction of the Empire State Building. How can a building with a steel framework be flexible?

Read Robert Frost's "The Birches".

Read R. L. Stevenson's "Windy Night".

FOLLOW-UP # 70 Berlese Funnel



Many more insects and related organisms are found in soil or humus than can be seen even by close examination. Using the Berlese Funnel is a technique for the removal of these living things from the soil. A funnel can be made of construction paper or cardboard lined with aluminum foil or any comparable material. Glass chemical funnels or metal funnels from the hardware store may be used. The funnel is held under a lamp by a ring stand, or other holding device, with its end in a jar containing water or water and alcohol.

If soil or leaf mold is placed on a square of screening in the funnel and the light is left on overnight or longer, the insects in the material will move to lower levels in the soil or leaf mold as it dries and eventually into the water or alcohol where they may be studied at leisure.

FOLLOW-UP # 75 Using Your Senses

Use your senses to find items to be placed in the proper category. Perhaps you can find some things that should be placed in more than one category.

SOUND	SMELL	FEEL	SIGHT

FOLLOW-UP #77 Any Bus Trip

Activities that could be used before arriving: (or after the trip)

1. Count natural areas that you pass on the way.
2. Count the number of different kinds of animals that you pass on the way.
3. Count the number of different kinds of plants that you pass on the way.
4. Count the signs of littering that you see along the way.
5. Count the eroded areas that you see.
6. Count the number of billboards you see along the way.

Activities that could be used after the trip:

1. Provide several "mystery bags" with organisms, parts of organisms, non-living things that were seen on the trip. Students can pass them around to feel, shake, etc. in order to identify them. Include soft drink bottles, can, etc.
2. Look for "carry-overs" from the trip: seed "hitchhikers" stuck on clothing, ticks from spring trips, etc.